

WHAT IS CLAIMED IS:

1. A method of obtaining an image using a CMOS sensor with a freeze-frame shutter comprising:

collecting a short image signal during a first time period;

sampling the short image signal after the first time period;

collecting a long image signal during a second time period;

sampling the long image signal after the second time period; and

combining the short image signal and the long image signal to create a total image signal.

2. The method of Claim 1, wherein the second time period includes the first time period.

3. The method of Claim 1, further comprising resetting a photodetector prior to collecting the short image signal.

4. The method of Claim 1, further comprising resetting a memory containing the total image signal prior to collecting the short image signal.

5. The method of Claim 1, further comprising simultaneous sampling of the short image signal while collecting the long image signal.

6. The method of Claim 1, further comprising reading the total image signal from the freeze-frame pixel.

7. The method of Claim 6, wherein the short image signals and the long image signals are not collected during the reading of the total image signal.

8. A freeze-frame pixel using wide dynamic range operating comprising:

a photodetector having a memory;

an analog memory; and

a plurality of switches which connect the photodetector to the analog memory, wherein a first switch allows collection of a first image signal by the photodetector, a second switch allows transfer of the first image signal from the photodetector memory to the analog memory while the photodetector continues to collect a second image signal, and the second switch then allowing transfer of the second image signal to the analog memory.

9. The freeze-frame pixel of Claim 8, wherein the first image signal is collected during a first time period and the second image signal is collected during a second time period, the second time period being longer than the first time period.

10. The freeze-frame pixel of Claim 9, wherein the second time period includes the first time period.

11. The freeze-frame pixel of Claim 8, wherein a third switch allows the photodetector and photodetector memory to be reset.

12. The freeze-frame pixel of Claim 11, wherein a fourth switch allows the analog memory to be reset.

13. The freeze-frame pixel of Claim 8, wherein the analog memory combines the first image signal and the second image signal to create a total image signal.

14. The freeze-frame pixel of Claim 13, further comprising a readout section to transfer the total image signal.

15. The freeze-frame pixel of Claim 8, further comprising an array of freeze-frame pixels.